

REMARKS

In the Office Action mailed March 30, 2004, the Examiner objected to Claims 1, 7, 13-15, and 19 because of informalities; and rejected claims 1, 3, 7, 13-15, and 17-20 under 35 USC § 103(a) as being unpatentable over JP 60-205641 in view of JP 3-253933. The foregoing objections and rejections are respectfully traversed.

In accordance with the foregoing, claims 1, 7, 13-15, 19, and 20 have been amended. No new matter is presented. Claims 1, 3, 7, 13-15, and 17-20 are pending and under consideration.

Claims 1, 7, 13, 14, 15, and 19 are amended to overcome the Examiner's objections. Withdrawal of the objections to the foregoing claims for informalities is respectfully requested.

The Examiner's rejections of all pending claims 1, 3, 7, 13-15, and 17-20 under 35 USC § 103(a) as being unpatentable over JP 60-205641, in view of JP 3-253933, are respectfully traversed.

JP 60-205641 discusses "...a multiple volume management table..." where if "...a plurality of multiple volumes exist, a multiple volume management table is provided for each multiple volume..." (page 4, lines 1-4). JP 60-205641 also discloses "...in the multiple volume management table, in order to select a physical volume for use, a number of requests field and a last access cylinder number field are provided..." (page 4, lines 4-7). Further, JP 60-205641 discusses "...a number of requests field exists for each physical volume..." where "...the numerical value data in the number of requests field indicate the number of requests currently received, this value being increased by one upon reception of an input/output request and decreased by one upon completion of an input/output operation..." (page 4, lines 7-13). JP 60-205641 also discusses "...the last access cylinder number field also exists from each physical volume..." where "...the data in the last access cylinder number field indicate the access cylinder number specified by the last input/output request which is connected to the queue of the relevant physical volume, these data being updated when a new input/output request is enqueued to the queue of this physical volume..." (page 4, lines 13-19).

JP 3-253933 discusses a table that stores "...a logical disk in which two disks are paired and considered as a single disk; the various states of two physical disks; and specification of the disk which is to be read accessed next, these various states being expressed by [0] and [1]..." (page 8, lines 25-27 and Page 9, lines 1-2). JP 3-253933 further discusses "...the management stores the states of a logical disk, a physical disk (primary), and a physical disk (secondary)..." (page 10, lines 15-17).

In contrast to the foregoing references relied upon, the table stored in the present invention patentably distinguishes over the table stored in JP 3-253933 at least because JP 3-253933 does not disclose a RAID apparatus. More particularly, neither reference either alone or in combination discusses in reference to Figure 3 the patentably distinguishing feature of storing status information in the table that includes "...structure information and mirroring information for each logical volume..." and the "...mirroring information consists of two bits indicating whether each of a pair of magnetic disk units which has a mirror structure is normal or abnormal" (page 10, lines 10-15).

Accordingly, independent claims 1, 7, 13-15, 19, and 20 of the present application have been amended. More particularly, each of amended independent claims 1, 7, 13-15, 19, and 20 recites (using the recitation of claim 1 as an example):

"...wherein said status information stored in said table includes structure definition information and mirroring information for each logical volume, and wherein said mirroring information comprises a pair information indicating status of said logical volumes in said table."

It is the Applicant's position that the presently amended independent Claims 1, 7, 13-15, 19, and 20 in combination with the arguments presented above overcome both cited references JP 60-205641 and JP 3-253933 cited by the Examiner as neither cited reference either teaches or discloses a table in a RAID apparatus as recited. Further, there is no suggestion or motivation in either JP 60-205641 or JP 3-253933 for one having ordinary skill in the art to combine the teachings of the two references to obtain the patentably distinguishing features of the present invention, as discussed above.

Moreover, all pending dependent claims 3, 17, and 18 depending from the presently amended independent claims 1, 7, 13-15, 19, and 20, are also placed in condition for allowance over JP 60-205641 and JP 3-253933.

Concluding Remarks –

Thus, none of the pending Claims 1, 3, 7, 13-15, and 17-20 in the present invention are obvious over JP 60-205641 or JP 3-253933 either alone or in combination, as both references fail to teach or disclose at least the patentably distinguishing features of the present invention as described above.

Accordingly, withdrawal of the foregoing rejections is respectfully requested and allowance of all pending claims 1, 3, 7, 13-15, and 17-20 is requested.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.


Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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